



Tango Bravo Program Proposers' Conference

8 November 2004

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Background



Tango Bravo: DARPA and Navy initiative to remove the technology barriers to enable reduced-size and reduced-cost options for future submarines

- **Follows from DARPA-Navy Sub Design Study (Sep 03-Apr 04)**
 - Explored future sub designs ~1/2 size & cost
 - Motivated by Navy interest in distributed propulsion approaches → ***NO SHAFT***
 - VA capability with less cost → ***FORCE STRUCTURE OPTIONS***
 - Early indication of reduced size with reduced cost feasibility
 - Study concluded early (May 04)
- **New initiative focuses on technology barriers**
 - Risk reduction through critical technology demos
 - Technology development in industry



Tango Bravo Program

- **GOAL is to overcome selected technological barriers that are expected to have significant impact on submarine hull, mechanical, and electrical (HM&E) systems to reduce the size and procurement cost of submarines**
- **Five technical areas:**
 - ***SHAFTLESS PROPULSION***
 - ***EXTERNAL WEAPON STOW AND LAUNCH***
 - ***HULL ADAPTABLE SONAR ARRAY***
 - ***RADICAL SHIP (HM&E) INFRASTRUCTURE REDUCTION***
 - ***REDUCED CREW/AUTOMATED ATTACK CENTER***
- **Metrics focused on cost and performance**



General Comments

- **Technology Demonstration Areas are distinct (a bidder may propose to one, some, or all, but separately)**
- **Funding**
 - **\$97M available over 48 months**
 - **Funding level for each technology area is not predetermined**
 - **Proposals must identify funds leverages from existing government contracts**
- **Phased Programs**
 - **Phase 1 is the base program; subsequent phases are options**
 - **Proposals should reflect cost structure for the overall program with subcontracts and testing/demo costs indicated**
 - **Phase 1 deliverable will be revised/refined technical and cost proposal for subsequent phases**
 - **Each phase will have metrics ('go/no-go criteria') to determine continuation to the next phase**



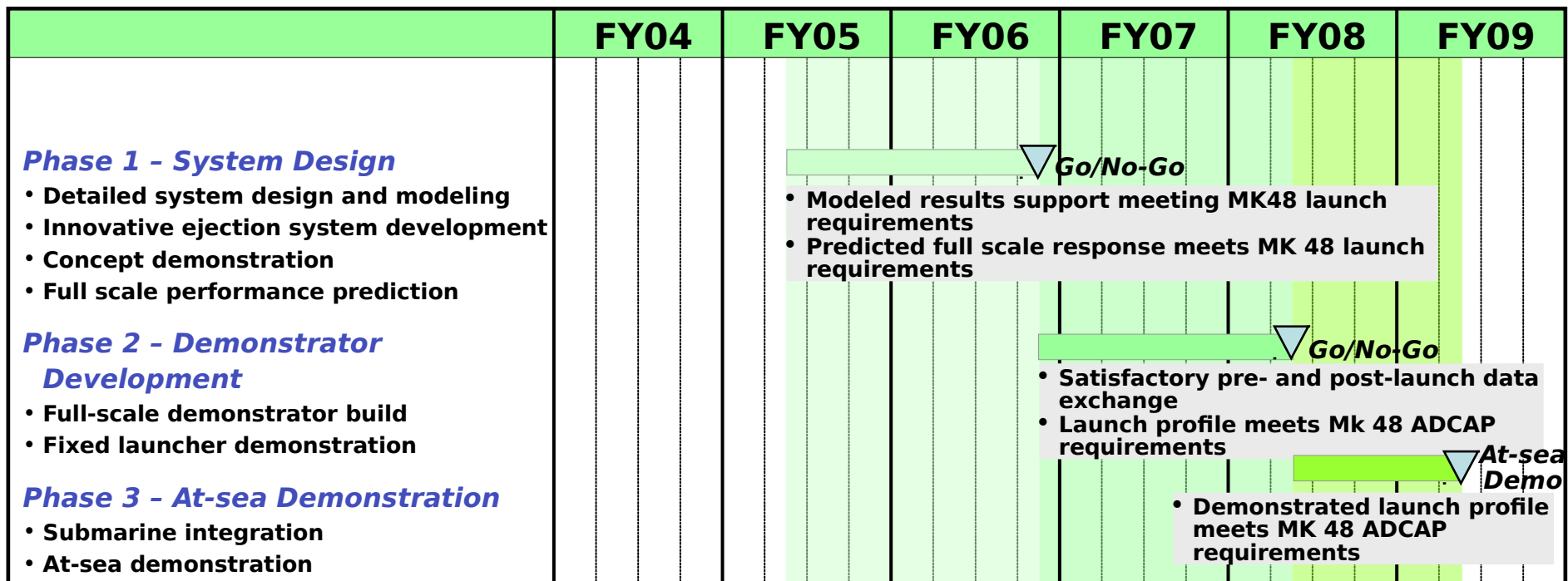
External Weapon Stow and Launch

Objective: Demonstrate an external weapon launch concept that can deliver an unencapsulated MK 48 ADCAP torpedo from outside the pressure hull at up to VIRGINIA flank speed and test depth

Impact on ship: Removes largest driver of internal volume

Challenges:

- Generate adequate force
- Integrity of launcher system design in overall ship concept





Notes on Technical Approach



- **Want innovative technology concepts, but also translatable to realizable ship concept**
- **Provide clear technical rationale behind any claims of potential benefits**
- **Identify/discuss trade-offs that may have to be made to accommodate the new concept**
- **Substantiate validity of experimental and demonstration approaches**
- **Focus on program phase go/no-go metrics; determine interim technical metrics to measure progress**



Programmatics

- **DARPA will be flexible in contracting approach**
 - **DARPA Contract and Navy, or other, Technical Agent**
 - **Navy Contract and Technical Agents**
 - **Bidder may suggest a vehicle**
- **Teaming encouraged → combine expertise to provide good value to Government and cross-pollination of ideas**
- **Use or participation of Government labs**
 - **Access points are the PRODUCT AREA DIRECTORS**
 - **Nature of partnering arrangement must be described**
 - **Government labs cannot be exclusive; firewalls needed**



Tentative Solicitation Schedule



BAA Release	October 15, 2004
Proposers Day Conference	November 8, 2004
Supplemental Data Document	November 22, 2004
Proposals Due	December 22, 2004
Proposal Evaluation Completed	January 20, 2005
Source Selection Complete	February 11, 2005
Contract Award(s)	April 15, 2005